POPULAR Computing WEEKLY

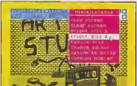
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Vol 4 No 45



OXFORD COMPUTER Publishing's Spectrum program Art Studio has been snapped up by British Telecom. It will be released on a new label set up by BT – story inside



Find out if you have won an Amstrad 6128 this week or at least some special *Popular Computing Weekly* cassette labels. Enter your personal Micro Magic number into our special computer program on page 6

MICRO MAGIC

THIS WEEK'S NEWS

- *BBC B production ceased*
- *Atari ST moves on up*
- *New Sinclair biography out*

Clive's New Year micros

IT IS now clear that Sinclair has two new micros lined up for launch early next year – the expanded memory version of the Spectrum, and an up-market, professional successor to the QL.

The company apparently fully intends to continue with two distinct types of micro using the two different processors – Z80 and 68000 family.

Both machines are likely to offer full upward software compatibility with their respective predecessors – the Spectrum Plus and QL.

The British version of the Spanish Spectrum 128K launched in Barcelona on September 23, will be the first to appear, probably in January 1986. It is not entirely clear, however, whether Sinclair simply intends to release a UK translation of the Spectrum 128, or a modified version – perhaps with better graphic facilities.

However, the new machine will look very similar to the Plus with a Plus-style keyboard – and may well appear in the same casing.

The new QL is likely to replace the 68008 processor with a full 68000 and a built-in 3½ inch disc unit in preference to microdrives. The package – unlikely to appear until the spring – will probably include a built in monitor.

continued on page 4 ▶

TWO NEW TITLES from Mikro-Gen (left) and Mastertronic (right)

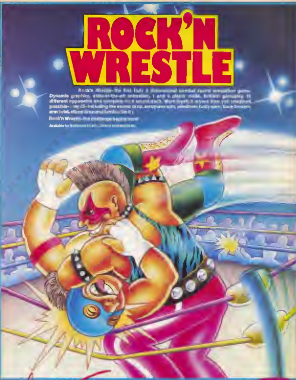
Mikro-Gen's Sir Fred (£9.95 on the Spectrum) has been licensed from a Spanish software company and is an old fashioned tale of knights rescuing imprisoned princesses.

The Last V8 from Mastertronic (£2.50 on the Commodore 64) is a hectic car race which features sophisticated music.

Both are due out next week.

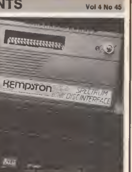





ROCK'N WRESTLE

CONTENTS

Vol 4 No 45



EDITORIAL

Software piracy is probably not something which is of great concern to the average computer program buyer. After all, software piracy is just as widespread and 'acceptable' as copying a friend's music cassette. The music industry lives with the problem so why can't the software industry?

Indeed, micro companies like Amstrad could be said to give tacit acceptance of software piracy through manufacture and marketing of twin-cassette players which can be used to copy from tape-to-tape.

Before long, though, the industry will evolve a sure-fire way of halting piracy through technological means.

In the long run that means following the music industry into CD Rom storage. Until then some form of cassette software protection will be used. A number of different systems are already being tested and most are highly unsatisfactory. From the software houses' point of view they all look great – they deter piracy. From the software buyer's angle they can introduce an unacceptable level of hassle into loading a program – for example the colour-coded cards. Even more confusing to use is the increasingly popular Lenslok system.

At present, the only system which gives something to the buyer as well as taking away ease-of-use is Mikro-Plus from Mikro-Gen. Its hardware add-on unit contains extra memory meaning more sophisticated games can be marketed.

People actually want Mikro-Plus – not as a protection device – but as a technological advance. And that means it will sell. It should please everyone from owners to programmers to retail chains like Boots and WH Smith.

The other systems are a convenience for the industry – to curb a very real problem – and a source of frustration for everyone else.

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Computer Trade Association Magazine of the Year

BBC 32K axed

ACORN HAS finally admitted that it has ceased manufacture of the 32K BBC model B, but claims that the Electron is still being produced

"We have stopped selling the 32K BBC in this country," said Bob Coates, the BBC micro system's product manager. "We decided that the 128K version of the B Plus is what people want. We feel that the B Plus offers good value for money and that we cannot really be offering a BBC machine with just 32K this Christmas"

Acorn's first BBC dropped



The BBC B Plus 64K costs £469, the B Plus 128K is priced at £499

He admitted too that Acorn had moved distribution away from the high street – none of the major chain stores are stocking the BBC machines and only Dixons/Currys offers the Electron

"We have deliberately narrowed the number of outlets to ensure that the machine is adequately supported," Bob Coates continued. "The Electron is now available only from Dixons/Currys and appointed Acorn dealers The 64K B Plus is also available from Acorn dealers as is the £30 kit which up-grades the 64K Plus to a 128K Plus"

His comments contrasted strongly with those of an official Acorn statement early last week that the 32K Ram model B was still being produced for the UK market and that it "would be surprising" if major high street retailers did not stock both the BBC and Electron machines this Christmas (see *Popular Computing Weekly*, October 31)

Sinclair's New Year plans

◄ continued from page 1

THE NEW Spectrum will preserve upwards compatibility by operating in two modes, like the mode switching in Commodore's 128 machine, in Spectrum Plus mode, none of the superior features of the 128, such as the Midi compatible RS232 interface, 8912 sound generator or the separate numeric keypad will operate Some British software companies are already working on the 128K machine for programs to use the extra features in 128 mode The 8912 sound chip is one of the features where the new Spectrum scores heavily over the current model with three-channel sound played through the television or monitor

The Basic Rom is increased from 16K to 32K with additional Basic commands to address the new features, including *Play* to access its sound facilities The 128K of memory is paged in 16K blocks. In 128K mode Basic the traditional Sinclair single-keyword entry is dispensed with – Basic commands must be typed in in full, letter by letter

The Spanish Spectrum 128 has a screen display and graphic capabilities unchanged from the Spectrum Plus Sinclair may well wish to improve graphic display for the model that eventually appears here.

While the new Spectrum will eventually supersede the Spectrum Plus as an entertainment home machine, the new QL model is intended for more serious application

Sir Clive last week said that he hopes to launch a machine for the professional market next year, which would incorporate the strength of QDos, the QL's operating system and software

The follow-up for the QL will almost certainly switch from the 68008 processor to a full 68000, with built-in single 3½ inch disc drive and monitor. The memory will also be increased, though probably only to 256K or 512K.

Again upwards compatibility from the QL will be an important feature, as will some built-in software in Rom The current plan appears to be to offer the new machine in a package – and follow Amstrad and Atari down the 'one plug' route

While Sinclair hopes that it can offer a system using windows, icons etc, and has been in discussion with Digital Research over Gem, it would like to be able to produce a similar system through QDos

The QL successor is likely to be launched in late spring to early summer next year at around £800

For Sinclair, a spokesman said, "I really cannot comment. There is so much speculation about what Sinclair may or may not be producing next year."

PCW 8256 mania hits high street

AMSTRAD'S new PCW 8256 micro is now available in a number of high street stores other than Dixons, although Dixons was originally intended to be the sole high-street stockist until Christmas

Both WH Smith and John Lewis stores have received the 8256 in the last week John Menzies also hopes to stock the machine before Christmas

"At the time of the launch of the 8256, it was announced that Dixons would hold exclusivity until Christmas," said a spokeswoman for Amstrad "During the months that it has been available, other chain stores have seen the machine and have wanted to stock it

"Consequently, a limited number have been made available so that stores can evaluate their stocks for the New Year"

"The PCW 8256 has gone into 140 of our outlets," said WH Smith's merchandise controller John Rowland "The 8256 fits in very well with both our typewriter and computer range"

The PCW 8256 costs £458 85 at WH Smith and £460 at John Lewis

BT forms new label

BRITISH TELECOM's new software divisions, Firebird and Beyond, are shortly to become three – Firebird is to split into two factions to separate its entertainment range from more serious titles

Firebird will remain the brand name for titles currently in its Silver range, Super Silver or Hot range, and will be run by Herbert Wright

Tony Rainbird will develop the new and as yet unnamed section "We are sectioning off certain programs – for instance, utilities or titles for sophisticated machine like the Atari ST," said Mike Anderson, of British Telecom's New Information Services

One of the new division's first titles will be *Art Studio* (see cover)

New 800XL deal

DIXONS is to sell off remaining stocks of Atari's 800XL micro in two special value packs

The first costs £99 99 and includes the 800XL with five software titles, joystick and cassette recorder The second, at £169 99 is the same as the first but with three more software titles and a disc unit included

Clive booked!

THE SINCLAIR Story is the first full length book of the fortunes and misfortunes of Sir Clive Sinclair's various business enterprises

Written by Rodney Dale, the account covers Sir Clive's early career as a technical journalist, and the founding of Sinclair Radionics in 1962, right up to summer 1986

The Sinclair Story is published by Duckworth at £9 95



Atari goes slow on 260ST

FIRMWARE up-grades for the Atari 520ST are now in sight and will be offered to current ST owners in Eprom form within the next month

Completion of the firmware and the settlement of the dispute between Gem author Digital Research and Apple (see *Popular Computing Weekly*, October 10), means that work on putting the programs into Rom can now begin.

"The operating system, Logo and Basic are now complete, so our intention now is to build them in chip form," said Atari UK's sales and marketing manager Rob Harding "The dealers will fit the upgrades for a nominal cost."

The nominal cost is £25, but customers who bought their 520STs at leading Atari dealer Silica Shop will get their upgrades free

"We felt strongly that early buyers of the ST shouldn't be penalised," said Silica Shop's marketing director Tony Deane

However, progress does not seem to have been made on the 260ST "We are still looking at the end of this year or the beginning of next to launch the 260ST," said Rob Harding "It is the modulator that is holding things up, though, rather than the firmware"

Amstrad in 'copier' row

AMSTRAD has failed to gain a formal declaration from the Court of Appeal that the marketing of its twin cassette recorder does not incite infringements of the Copyright Act 1956 (see *Popular Computing Weekly*, July 4)

The High Court had earlier ruled that Amstrad's, TS 39, TS 87 and SM 104 twin high-speed audio cassette machines encouraged members of the public to breach copyright in an action brought against Amstrad by the British Phonographic Institute (BPI).

However, the Appeal Court did also rule that there was no substance in BPI's allegations that Amstrad had incurred civil liability in its marketing of the machines, which reversed the High Court judgements

The Appeal Court judge expressed the view that it was very unlikely that anyone would attack Amstrad's marketing through the 1956 Copyright Act.

Amstrad's Malcolm Miller asserted that there was no question of Amstrad either withdrawing the twin cassette decks or changing its advertising

Virgin set to hit with Now! Games 2

FOLLOWING the success of the compilation tape *Now! Games* – which Virgin claims has sold more than 50,000 copies – the company is set to release *Now! Games 2*

Now! Games 2 will comprise *Airwolf* (Elite), *Tir Na Nog* (Gargoyle), *Chuckie Egg* (A'n'F), *Cauldron* (Palace) and *World Cup Soccer* (Artic)



Elite from Now! Games 2

It will be available in early December for the Spectrum and Commodore 64, price £8 95

Letters

DIY destruction

Monitoring alien life forms (*Letters*, September 19) is an amusing if thankless task

I must take issue with Mr Seldon's comments, though. It is a common belief among my colleagues at the Galactic Geography Survey that the human race is more likely to eat a non-earthling than to blast it. Of the thousands of different life forms on your planet we can only identify a handful that have never been eaten by humans

Mr Seldon's main point – that there is something inherently wrong with games that involve zapping aliens – also looks somewhat strange from our viewpoint The frightening fact is that these games merely reflect the human's inability to form peaceful relationships with anyone – even other humans There was an interesting contradiction in the letter when Mr Seldon suggested that the xenophobic nature of some of your software would cause an otherwise peaceful alien race to vaporise your planet.

That, we feel, is a job you will do yourselves, given time

The Alien
Name and Co-ordinates
witheld by request

128K drawback?

I was pleased to see that after months of the usual Sinclair denials the new 128K Spectrum has been unveiled – even if it is only in Spain. As a very satisfied owner of an Issue One Spectrum I am eagerly awaiting the extra memory

But I, for one, will not be buying if the new machine in this country is launched with the same kind of keyboard as the Spectrum Plus I want a real keyboard that can be used for something other than zapping aliens

David Evans
Tottenham
North London

The keyboard on the Spanish 128K, at least, looks identical to that on the Spectrum Plus.



"All the adjectives will be available soon in a separate booklet."

Addict's delay

Why hasn't my Arcade Addict's Handbook arrived yet?

James Powell
23 Beaumont Close
Romford
Essex

Apologies to anyone who is still waiting for their free Arcade Addict's Handbook – we have been overwhelmed by the response. We hope to send them all out before the end of this month.

Fawlty logic

I trust that, when the 128K Spectrum is launched in Spain, it will come complete with an operating manual?

Frank Lewis
24 Argyle Road
Sevenoaks
Kent

THAMES TV TELETHON

Popular Computing Weekly has now raised over £750 in donations from readers to be donated to the Thames TV Telethon Charity Appeal.

It has been a tremendous effort and thank you very much from all at *Popular* to those who gave money to such a deserving cause.

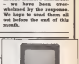
Micro Magic



Popular cassette labels

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Micro Magic



The Amstrad CPC6128

We are giving away an Amstrad CPC6128 128K micro – worth £399 – every seven days until Christmas. Not only that, but every Micro Magic card is a winner – every card wins a runner-up prize of free Special *Popular Computing Weekly* cassette labels

How to find out if you win this week

To find out if you are a prize winner this week this is what you must do

1) Key in the computer program listing printed here into your micro and *Run* the program.

2) Input your special **Micro Magic** number as data in the program when requested and press *Enter*

3) The program will tell you if you have won a prize this week and what it is

4) If you have won a prize you can claim it by filling in the coupon on the back of your special **Micro Magic** card **Then send the completed card off to: Micro Magic, Popular Computing Weekly, 12-13 Little Newport Street, London WC2H 7PP.**

Don't forget to fill in both your name and address, and also both your winning **Micro Magic** answer from this week and your special **Micro Magic** number

5) If you haven't won this week, don't give up hope Keep your **Micro Magic** card and use it to find out if you win with next week's **Micro Magic** computer program The same card will last you right through to Christmas, so don't throw it away – you could miss the opportunity to win.

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[illegible]
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Micro Magic Week 5 Program listing

This week's winning Micro Magic Numbers: 1326328 and 12840

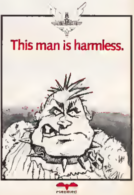
If you think you've won complete the form on the back of your Micro Magic card and send it to: Micro Magic, Popular Computing Weekly, 12-13 Little Newport Street, London WC2H 7PP.

Micro Magic cards can only be obtained in line with the criteria outlined by Scot Press Participants are entitled to only one card each. Cards and accompanying documentation can be obtained free of charge by writing to Scot Press, 12-13 Little Newport Street London WC2H 7PP


This boy is a fugitive.
FIREBIRD


This girl is dangerous.
FIREBIRD


This lady is deadly.
FIREBIRD


This man is harmless.
FIREBIRD

On the crest of a wave

Surf's up! ***John Minson*** *goes paddling with New Concepts*

Of all adjectives in the computing world, new has to be one of the most common Heralding from the old world charms of Ireland, however is New Concepts, a company which believes it lives up to that overworked epithet

The promise of yet another sports simulation may seem less than novel but when the program is called *Surf Champ* you have to admit that it's hardly a national pastime But its originality lies in the method of control: not the keyboard, not a joystick but a seven inch surf board that sits over the keys Even more strange to relate we're talking about the rubber-keyed Spectrum here.

While it could have been a mere gimmick, New Concepts has ensured that this overlay behaves just like a real board, depending on where you apply pressure It takes 20 keys to read that input – rather too many for the average hand! And the company has protected its idea by obtaining a patent for the overlay concept

"The profit is in new ideas," says Norman McMillan the man behind New Concepts, and he isn't talking about mere financial income When he's not teaching instrumentation at Carlow Technical College, he's likely to be organising touring exhibitions or conferences about the great Irish scientist, Tyndall as well as somehow finding time to run the company.

Like Tyndall, Norman is a born educator, but that doesn't mean dry book learning He considers sport to be leisure education and at the heart of *Surf Champ* is some hard core physics ranging from wave behaviour to the surfer's energy expenditure under various conditions The accuracy of the simulation is endorsed by Reg Prytherch, President of the International Surfing Federation and Rod Brooks, President of the Australian Surfing Association.

"If surfers think these things are important then kids will learn they're important. Why pander to what they already know? It's a waste of time and the kids are no richer when they play the game " Norman tells of one occasion when sprite flicker was causing problems "I got a phone call saying, 'I can take out all the physics and get the sprites to move smoothly.' I said, 'Don't you touch it, mate '"

One bow to the high score freaks is that while the scoring closely follows that of competitions, with the more spectacular manoeuvres rating proportionately higher, it is out of 100,000 rather than a paltry ten But it must be admitted that graphically the pre-production copy of the program that I saw was well behind the sophistication of many games, a trade off for the vast amounts of code necessary to read the keys and calculate the equations

Doubts about lack of surface gloss fade as you play Norman demonstrates how you paddle out, ducking under the waves, your hand flat on the board alternately pressing *Caps Shift* and *1* on the rubber-keyed Spectrum

Next wait for the right wave and, judging your timing carefully, catch it by pressing *2* The screen changes to show a larger sprite surfer riding the wave, in the same sort of perspective seen in photographs of the sport, Norman explains. You move your hand to the back of the board, just as in reality the surfer balances there to keep the board's nose out of the water Pressure on either side makes you turn, the angle determined by how far up the board you are The whole range of surf stunts are available from merely gliding along the length of the waves to hairpinning up to its top and flying into the air before twisting back on to it



Norman says, "The paddle gives the tactile simulation – it gets as close as possible to the real thing ' After a little practice I fully agree And I can believe in the educational side of *Surf Champ* because the player is constantly learning from the physical experience, from the initial choices and from the personal details which determine how well you can hope to perform.

The idea of combining surf and micros came from Norman's teenage son, Doug, a surfer of two years vintage A more overtly educational program, *Three Miles High* was put to one side when Anthony Kelly, a brilliant young electronic design student, said he could see a way of doing this

That was back in summer '84 A long period followed, until May this year, when more and more people were brought in but proved unable to get the program working At Easter Norman himself took charge and wrote the physics algorithms which were coded in Pascal because it runs 20 to 40 times faster than Basic but is easier to debug However it's costly in terms of memory

Meanwhile Anthony worked on the sprites and at last things began to come together The other members of the team included Des, a pure science student, Kieran and Rocky But Norman was still learning from harsh experience "Programmers always underestimate It always takes a hundred times longer " The proposed July completion date passed and their landlord began to ask questions about squatters, there were so many all night programming sessions ' In a country town they don't expect guys to be doing these things anyhow "

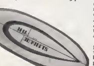
With the program itself near to completion, though with advertising and other marketing expenses still to come, the involvement of Irish government aid, in the shape of the Industrial Development Authority, became necessary

The launch of *Surf Champ* came at the European Surf Championships in County Donegal Some details of the game were still incomplete alternative music had to be added, plans to make keyboard response sluggish as your surfer grows tired had to be dropped from the Spectrum version, though should reappear on the Amstrad. And there was still the problem of designing a surf board for the Spectrum Plus

But at last Norman McMillan's dream was close to realisation, and the response from the surfers was excellent. Despite the still present financial risk, Norman was happy to talk about further New Concepts projects

These include conversions of *Surf Champ* and new beaches with different types of wave, including a 'tube' – when you take your board and surf along the hollow as the water curls above you Future simulations include one for skiers, and while it will initially use two plastic skis, New Concepts is looking at a yet more realistic method of user interface

Once again Norman's enthusiasm grows "This program is a generation ahead of anything else It isn't just men jumping over barrels " It remains to be seen whether his faith is misplaced. "If it fails the money's lost. It's back to a cottage industry." But I wish Norman McMillan and his dream well A lot of hard work has gone into it and spectral surfing is a whole lot of fun too





I, OF THE MASK
BY SANDY WHITE
Electric Dreams
SOFTWARE
SPACEMAN

Toolkit

Program *Utopia* **Micro** Amstrad**Price** £29 95 (Rom) **Supplies** Arnor, The Studio, Ledbury Place, Croydon, Surrey CR0 1ET

Of the Rom software releases for the BBC, Beebug's *Toolkit* is amongst the most respected. *Utopia* is credited to the same author and provides CPC owners with a similar range of utilities

Disc commands include *Format*, *Discopy*, *Disctest*, etc, – normally available only by loading a CP/M disc. There is also an *Access* command similar to the BBC for making files Read Only and there is a disc sector editor useful for recovering erased files *Info* provides the length, start and execution address of files on tape or disc, *Copy* transfers files from disc to disc (1 or 2 drives), disc to tape, or tape to disc. *Verify* has been provided for programs or Ascii text. *List*, *Type* or *Dump* put file contents on screen in various formats. *Spool* echoes any screen output to a file whilst *Printon* echoes it to printer New *Load* and *Save* commands give more options over file type and position in memory

Programming aids include *Search/Replace* for Basic tokens or Ascii text *Move* lines of Basic, *List* all functions, arrays, variables, function key definitions (including several that are programmed at power up such as a function that restores all screen parameters to their original state – useful if you get lost in a mishmash of inks and windows), memory dump and memory edit, and a status display of program start address, length, free memory etc Finally come the Rom control commands for switching Roms on and off (vital to run long programs such as *3D Grand Prix*), listing and selecting commands from specified Roms even if several use the same words A powerful range of commands at a bargain price for a Rom.

Tony Kendle

Circuits

Program *Qcad* **Micro** QL **Price** £29 95 **Supplier** Stonelink Trading Ltd, Heckenrosenweg 6 3170 Gifhorn, West Germany.

This is a computer aided electronic circuit and PCB layout design package for the QL, consisting of the main design program *Qcad* itself, *Qcomp* a component symbol set designer and a predefined symbol set

Qcad is quite friendly to use and provides such features as freehand sketching (using cursor keys/joystick), automatic joining of points on the circuit, placing of circles, arcs etc, text labelling and a screen to printer dump routine for most dot matrix printers with graphic capabilities The most powerful feature of all though is the use of predefined component symbols which are the solid state equivalent of a component stencil The symbol set provided is a standard general purpose set, which should serve most requirements, in BS3939 format rather than the American style component symbols If you require unusual component symbols then you can define your own sets using *Qcomp*.

Qcomp is an intriguing program since the component symbols you design with it are compiled as actual Superbasic procedures – an unorthodox system perhaps, but very effective The only drawback is that the procedures are merged into *Qcad* as required which is a slow process compared with loading in a similar size data file For those familiar with Basic this system is a clear advantage, enabling you to write complex symbols directly in Basic or even use the procedures easily created by *Qcomp* in your own programs I found *Qcomp* easy to use, designing a small symbol set without even reading the manual.

Although *Qcad* is written in Basic this doesn't make the software too slow, though you can get the occasional problem where *Qcad* falls over on microdrive errors, on microdrive when *Qcad* tries to access it for instance

Qcad has most features that an electronics Cader requires Radio hams, electro-hobbyists, professional designers of small circuits, and perhaps most of all electronic students who have to design a project as part of their course, will find this package of great value

Jonathan Prestidge



Wah!

Program *Wham – The Music Box* **Micro** Spectrum **Price** £7 95 **Supplier** Melbourne House, Castle Yard House, Castle Yard, Richmond TW10 6TF

Of all criticisms of the Spectrum its meagre sound ability takes most flak and until now the only way to make Sir Clive's machine sing has been to buy a peripheral device But anybody who has heard the opening music of *Fairlight* will have asked, could that really be two channels?

The emulator that was used to such great effect there is now about to be made publicly available, courtesy of Melbourne House, and I've been fortunate enough to have an early version to play with. It comes with the Wham name because the finished product will include a selection of their hits but don't let that put you off – you can easily erase them from memory

That leaves it clear for your own composition, which is achieved one channel at a time using that barely satisfactory compromise, the bottom two rows of the keyboard as a piano Luckily there's a simple back space to correct duff notes The whole process is geared to playing by ear and there are single step and continuous play preview facilities

If you think percussion would liven up the track there's a controllable white noise generator with which to synthesise drums, though adding these to the finished music removes other notes at that point. There's room in memory to store six tunes,and these can be saved to tape or drive or compiled and used in your own programs Alternatively you use output an audio signal direct from the Mic socket on to tape.

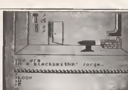
I must admit that I was disappointed that the utility wasn't more musically standard. In this prototype the notes weren't even correctly registered on the upper stave, though this should be corrected soon. All notes are entered as quavers in common time, and though you could write in other time schemes the bar lines would be in the wrong place There's no way of differentiating consecutive notes of the same pitch.

That said, I found the program fun to use, though somewhat limited, and with slight problems as to the keyboard and control keys

John Minson

M. goes gaga

Program *The Quest for the Holy Grail* **Micro** Spectrum **Price** £1 99 **Supplier** Mastertronic, 8-10 Paul Street, London EC2A 4JH



Allo there, silly English person What do you want? A 'Oly Grail, you say? Pah! Well, we will not help you, pile of wombat droppings I unblock my nasal cavities in your direction and your aunty smells like a goat. We 'ave an 'Oly Grail of our own and no, you cannot see it Eet is complete with 16K Ram pack, so there Now hither away before I get nasty and twirl my bottom at you

"What? You are still here? Then I will give you this adventure game for your silly Spectrum computer which I loathe more than those bits of fluff which you find in your navel. Somewhere there is an 'Oly Grail in it, I suppose, you ridiculous English k-nicht!"

And now for something completely different. .

"Hallo You look like a man of the world. Ever played any computer games? May be a bit more adult than *Jet Set Willy* (knowing wink) Adventure games about grails? Great big grails? Well. . . what's it like?

"Right. Pay attention. I'll tell you what it's like It's silly Very silly And I don't like it, though I'm sure some of you out there Yes, you, and stop that immediately You'll like it. But as an adventure with lots of manly things like maiming and killing and tearing the heads off gerbils while wearing women's clothing – well, it's just a non-starter Still, if you like that sort of thing you'll have a laugh or two Or three Perhaps even four. Right – back to the review, and let's have no more silliness "

(Note What our writer's trying to say is that if you're a *Monty Python* fan you'll endure the slow response time and uninspired graphics for the Pythonesque tone of this game. Ed)

John Minson
(Silly Candidate)

D Day

Program *Crusade in Europe* **Micro** Commodore 64 **Price** £14 95 **Supplier** US Gold, Unit 10 The Parkway Ind. Centre, Ueneage Street, Birmingham B7 4LY

Wargaming is a minority taste, but the devotion of that minority to their hobby and their continuing willingness to pay over £10 and sometimes a great deal more for sheets of papers and fiddly bits of cardboard has made them a fascinating target for software houses

Crusade in Europe is based on the Allied campaign in Northern Europe from D-Day up to December 1944 Within that massive sweep the player can chose five scenarios Each scenario is subdivided into sub-scenarios offering the player plenty of choice This choice is increased by two features which the computer adds to traditional board gaming The player need not have an opponent, but can play against the machine – a real godsend for all gamers – and the player can alter the balance of the play to favour one side or the other

The ultimate test of any historical recreation is how well the players are encouraged to duplicate history Here *Crusade* comes up trumps On a tactical level the player learns to handle the various elements of the army as the better generals did and the campaigns follow either the real course of history or suggested plausible alternatives.

The game is not perfect. The first fault occurs during loading when the computer asks you for a codeword (16 are listed in the rulebook), if you type in the wrong one the game will let you play for two 'days' and then end

The second fault is in the way information about units is communicated to the player When they are in combat they periodically flash messages on the board, these can be quite important if a unit is taking a hammering, the messages are there and gone in just that, a flash, and there is no way of recalling ones a player has missed In order to keep checking on a unit's status the player has to keep moving the cursor around and asking questions, this slows the computer and, consequently, the game

Similarly the computer has a habit of issuing unilateral orders so that a player will imagine that a unit is doing one thing when it is in fact doing something totally different (which, according to the program, he would have ordered if he'd had any sense)

Supply is crucial to units and the supply phase is whizzed through so quickly that it is often difficult to tell which units are in or out of supply

Finally the map is much more difficult to read than the hexagon decorated board most wargame players will be familiar with.

In spite of these quibbles MicroSoft have produced a game that satisfies the games players' demand for playability, historical accuracy and balance, and has added to that a whole new dimension of feel and, best of all a game that can be played solo

Peter Berlin

Injuns!

Program *Seventh Cavalry* **Micro** Spectrum **Price** £3 50 **Supplier** Black Knight Computers, PO Box 132, Chislehurst, Kent.

Howdy, y'all Here is Black Knight, a long long way from home in the John Wayne country of the 1870s with a strategic war game in which you command 600 cavalry troopers on a mission to destroy 15 Indian settlements and force 4000 braves off mining territory

Ignoring the morality of this exercise (ever see *Soldier Blue*, pardner?) you have one week to complete the mission, with each day passing in quarter hour segments So you ride out across the varied landscape to encounter the noble and brave Indian warriors sorry, redskin varmits

Beneath you are 12 troops, identified by letter, and you command them one by one via nested menus, the main options being movement at various rates or rest, this being very much a game of military resource management. Delay gives the Indians, who move simultaneously with you, the advantage As the screen only presents a small area of the map you'll have to split up to locate their teepees

Congratulations to Black Knight for avoiding the usual grid, but sadly their alternative is almost as dull. Specifying movement option, with its slow response, then speed and direction time after time had become a dry round of key pressing even before noon on the first day

There's a reasonable idea at the heart of this game and it may pass at the price but did I find it lively or engaging? The hell I did!

John Minson

Disc system

Product *Spectrum Disc Interface* **Price** £85 **Micro** Spectrum Plus **Supplier** Kempston, Bedford.

Choosing a disc system for the Spectrum has always been a difficult task, thanks to Sinclair's lack of support for disc in favour of the Microdrive

Kempston's offering is disc interface – and incidentally, the smallest I have ever seen – which will operate with any size drive – 3 inch, 3½ inch or 5 inch, as long as it is suitable for use with the BBC, and has a power supply

Quite simply the unit performed all savings and loading of a variety of files without any problem. I was pleased to see that sequential files were provided although in practice I have never missed them from my system. Savings an array *a$(2000,20)* as both Data and as a file took three times as long in sequential form and 2K extra disc space.

Once opened a file can only be written to if it is a new file or read from if it is an old file

My biggest hope was for the tape to disc copy. This is where all Spectrum drive systems suffer as no-one is producing software on disc for the Spectrum but my hopes were dashed. The software suffers from a couple of problems, first I found that the input was much more sensitive, and tape volumes had to be very precise. Secondly, the transfer works fine but is done in block. It is left to you to try and break into the loader programs and convert all this *Save/load* commands to disc syntax. As the program is transferred in block, all the protection is also transferred making it just as difficult to modify as with my old system.

To end a transfer session you have to *Break* out of the program. Often the program would refuse to do so and repeatedly dump 64K of garbage onto the disc before crashing with a disc full message

Instructions

It is accompanied by a small, 18-age booklet, and the print is tiny so you'll need good eyesight to read it

There are plenty of sections which offer practical advice but they seem to be thrown in ad hoc. Competent programmers can find the information they need but it could have been clearer.

Os Commands

In the software all the normal *Save* and *Load* options are provided plus most of the microdrive functions: *Format, Cat, Erase, Move, Open, Close#, Print#, Input#* and *Inkey$#*. All commands except



the last three are called by preceding them with *Print n1, n2,* etc

It does not take long to become familiar with this system and the operating system is reasonably friendly,

What really excited me was some of the additional commands supplied. *Clear 0* will compress a program by changing all numbers into *Val "no"* form. This seems longer but be assured it does save space due to the Spectrum's floating point number system

Clear Print no1, no2 will perform a block delete from line no1 to line no2 inclusive.

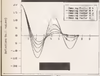
This interface is a good unit which unfortunately promises more than it affectively delivers. It would have helped if instead of a condensing routine they had provided a routine to check through the programs being transferred, and modified the *Save/Load* syntax.

Ray Elder

Plot commands

Hardware *Plotmate* plus *Lincad, Linchart* and *Lintronic* **Micro** BBC **Price** **Supplier** Linear Graphics, 28 Purdeys Way, Rochford, Essex

The dot matrix printer is an excellent device for producing good quality text printouts. With suitable software it can even produce screen dumps, but these are far from being high quality.



There is very little to beat the standard of hard copy produced by a good quality X-Y plotter

The Plotmate plotter from Linear Graphics is one such device which has been designed to be used in conjunction with the BBC computer – plugging into the BBC's user port

As well as the plotter itself, you get a system disc with the software needed to drive the unit and several excellent demonstration programs, six pens, some sheets of coated plotting paper and a 72-page ring-bound manual.

The felt tip pens merely push into the pen holder and lock home with a quick twist. Once the pen is in place one of the glossy sheets of A4 size paper can be laid on the plotter bed and held in place using two magnetic strips

The software supplied with the plotter came in two forms, the first was the 'low' form which sat low enough in memory to allow the use of the Mode 4 graphics screen. This meant that plotting could be carried out on the screen and plotter simultaneously. The second copy of the software was the 'high' version. This locates itself high in memory allowing more space for the program but output is directed to the plotter only

All of the commands to the plotter are assigned to seven of the BBC's function keys. These commands consist of *On/Off, Move Pen* (using cursor keys), pen *Up/Down*, pen *Home* and pen *Park*. All of these commands can also be issued from within your programs

The plotter is supplied with six pens, only one of which may be used at any one time. Although the plotter will not automatically select a new colour from a rack of pens and continue with the drawing, the BBC's *Gcol* statement can be used within a program causing execution to be halted whilst you change pens.

Using Plotmate is a dream, if you can draw a picture on the screen using the BBC's graphics commands then you can use Plotmate. It acts exactly as you would expect when using *Move* and *Draw* statements, moving with pen up and pen down, respectively. It even responds to the *Plot 85* statement by filling a triangle. Text can be printed at any point on the drawing via the VDU5 statement. The graphics cursor being moved to any point on the drawing and the text output using the *Print* statement.

Linear Graphics has also developed a suite of software packages for use with the Plotmate

The first, *Lincad*, is a crude computer – aided design system. The drawing facilities provided are extremely limited. The second program, *Linchart*, was much more useful. It enables you to produce both bar and pie charts with the minimum of fuss. Finally, *Lintronic*, is a system which allows the user to design, edit, and store electronic circuit diagrams

I felt that the Plotmate and system disc plus the *Linchart* software would be the combination with facilities to deal with the graphical requirements of most users

John Revie

Trivia

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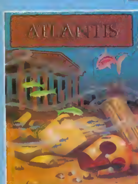
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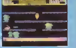


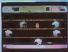
Oceans of the world are the treasure houses of King Neptune, whose priceless riches are guarded by armies of sharks, octopi, crabs and other inhabitants of his watery world.

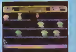
Skip, a treasure-hunting diver is searching for the treasures prized by Neptune above all others: perfect pearls and beautiful mermaids. His search is fraught with danger: the bite of a shark is fatal, and Neptune is omnipotent – but the lure of immeasurable wealth is irresistible.

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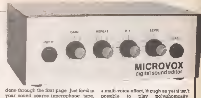
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Electro-music



Hardware *Microvox Digital Sound Sampler* **Micro** Commodore 64 **Price** £230 **Supplier** Supersoft, Winchester House, Canning Road, Wealdstone, Middlesex (01-690 1166).

Since Paul Hardcastle's 'N N N N-Nineteen", there can't be many people unaware of the possibilities of sampling real sounds for musical purposes What some may not realise is that with the introduction of digital drum machines and ever-cheaper samplers, it's now almost the rule rather than the exception for a record to be made using samplers

Home computers are ideal for putting to use as sampling musical instruments, they contain the same sort of hardware as the dedicated devices such as the £8,000 Emulator or £20,000 Fairlight The first affordable, professional standard sampler (fitted with the now compulsory Midi interface) available for home computers is Supersoft's Microvox digital sound sampler

The Microvox is a neat metal box half the size of the Commodore 64, with a power supply, decent manual and software on disc Sockets on the back are Audio In and Out, Midi In and Out, and there's also a ribbon cable connecting to the 64's cartridge port On the front panel is the *Gain* control for adjusting the sound input level *Mix* for balancing the original sound and the sample, *Output* level and *Repeat* for use in the "echo unit" mode

So what can you do with the software? Sampling, which is monophonic (polyphony at this price is still some way off!) is done through the first page Just feed in your sound source (microphone tape, record or whatever) set the gain control and sample threshold using the bar displays, choose the sampling rate, and go. Samples can be from 0 5 to 17 seconds, for the best quality, 1 6 seconds at 10 KHz is ideal The compander and filter sections help you to preserve the quality of your sample which, if carefully done, can be almost indistinguishable from reality!

The waveform editor page draws pretty diagrams and allows you to loop, invert, edit, and fade in or out the sound. Imagine a whole orchestral Whoomph! sampled from compact disc, fading in, looping over and over again (backwards) than fading out – at any pitch! The range of possible effects is mind-boggling

Samples can be made until the available memory is used up This is likely to be to record each instrument of a drum kit which can then be played by the sequencer section, or live from the 64's keys Although there are other digital drum machines available for the 64, notably the excellent Syntron digidrum, they don't allow you to play from the keyboard

You can also layer sounds together for a multi-voice effect, though as yet it isn't possible to play polyphonically Supersoft say that C128 version of the sampler may well be duophonic, however, so that will be worth waiting for

Most musicians will be interested in using the sampler with other Midi instruments. This recently-developed Musical Instrument Digital Interface system allows all sorts of electronic instruments by different manufacturers to be interconnected In the case of the Microvox, control can be assigned to any of 16 channels, and the sampler played from your Midi synth.

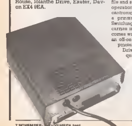
With a full range of disc save routines to enable you to keep your best samples and re-use them at any time, and new developments on the way which will enable it to be used as a harmoniser, digital delay, phaser, flanger and so on, the Microvox is an impressive product.

For the price, you will be getting a user-friendly, high-quality add-on which once again demonstrates the importance of the Commodore 64 in electronic music and home recording Highly recommended for budget-conscious electro-musicians, new hardware fans and n-n-n-n-nineteen-year-olds everywhere

Chris Jenkins

Versatile

Hardware *Bright Star Modem* **Price** £179.95 **Micro** QL **Supplier** Modem House, Iolanthe Drive, Exeter, Devon EX4 9EA.



The Bright Star modem, at a tempting price of £179 95, is fully controlled via software (supplied on microdrive with the modem) which is very easy to operate and includes a help file and self-test mode to ensure correct operation Another useful feature is a centronics interface to link the modem to a printer with a 2K buffer back-up Switching Bright Star on (the modem carries its own internal power supply, comes with a plugged cable and carries an off-on switch at the rear) gives the printer control mode as the default

Driving the printer does not require any additional software and can normally be handled via the QL's keyboard.

The Bright Star has an auto-scan feature which enables the modem to sort out the communication protocols after establishing contact with a remote computer As working out the correct protocols can be a frustrating business for those inexperienced in going on-line, this is a very useful addition to a generally well-designed product

Bright Star's operating baud rates are 300/300, 1200/75, 75/1200 and 1200/1200. At the moment Bright Star lacks an auto-answer/auto-dial facility but models selling at £209 95 with this feature are in the pipe-line My review Bright Star is clearly a prototype and isn't much to look at but – having seen the real thing at the PCW show – the finished product is much better, even if it still isn't the most attractive piece of computer add-on equipment I've ever run across. Bright Star is a versatile communicator that is both well-designed and offered at a competitive price.

Brian Beckett

Man O' War

Heave to and splice those mainbraces as David Muir shivers your timbers on the Amstrad

This game is a simple simulation of old style naval warfare between galleons on the high seas. You play against the computer using cursor and copy keys, or joystick. Eye patches, wooden legs and parrots can be considered as purely optional.

The listing is well punctuated with Rem statements and when run produces a title screen and full playing instructions. *Man O' War* uses many Amstrad specific features, such as windows and interrupt driven subroutines, so it would not be easy to transport to another machine.



```
10
20 ' GALLEON by D.SMITH '85
30
40 GOTO 1000
50
60 ' update scoreboards
70
80 CLS #1:IF shits>2 THEN chits=0:sh=sh+1:sc=sc+100:cff=-1:IF pl<
3 THEN IF sh>0 THEN IF sh/5=INT(sh/5) THEN pl=pl+1
90 PRINT #1,chits;:SOUND 7,1000,20,5,2,2,2:RETURN
100 CLS #2:PRINT #2,sh;:RETURN
110 CLS #3:PRINT #3,sc;:RETURN
120 CLS #4:IF phits>2 THEN phits=0:pl=pl-1:plf=-1:GOSUB 140
130 PRINT #4,phits;:RETURN
140 CLS #5:PRINT #5,LEFT$(tp$,pl+1);:IF pl=0 THEN lf=-1
150 RETURN
160
170 ' move player shell/computer shell
180
190 bl:IF NOT pk THEN 260
200 LOCATE pfx,pfy:PRINT " ";
210 IF pfy<5 OR (pfy=16 AND FNp>3 AND FNp(8)) THEN pk=0:GOTO 300
220 pfy=pfy-1:LOCATE pfx,pfy:PEN 1:PRINT CHR$(195);
230 IF ABS(cx+2-pfx)<2 THEN IF pfy=7 THEN LOCATE pfx,pfy:PEN 2:PR
INT CHR$(238);:chits=chits+1:sc=sc+10:pk=0:GOSUB 80:GOSUB 110
240 IF NOT cl THEN RETURN
250 LOCATE cfx,cfy:PRINT " ";
260 IF cfy>21 THEN cl=0:RETURN
270 cfy=cfy+1:LOCATE cfx,cfy:PEN 3:PRINT CHR$(144);
280 IF ABS(px+2-cfx)<2 THEN IF cfy=21 THEN LOCATE cfx,cfy:PEN 2:P
RINT CHR$(238);:phits=phits+1:cl=0:SOUND 7,1000,20,5,2,2,7:GOSUB
120
290 RETURN
300
310 ' move computer boat
320
330 ti=ca=ca+1:IF ca<cl THEN ca=0:cd=-cd:cc=3-cc:c$=l$+c$:NOT cx...
3);RETURN
340 IF cx+cd>36 OR cx+cd<1 THEN cd=-cd:cc=3-cc
350 cx=cx+cd:LOCATE cx,cy:PRINT USING "&";b(cc);:RETURN
360
370 ' prime computer gun
380
390 bl:IF cff OR pl< THEN RETURN
400 IF cl THEN RETURN ELSE cl=-1:cfx=cx+3:cfy=cy+1:IF ABS(px-cx)>
3 OR FNc15 AND FNc(4) THEN cl=0:RETURN
410 PEN 2:LOCATE cfx,cfy:PRINT CHR$(238);:SOUND 7,1000,10,6,1,1:R
ETURN
420
430 ' player move
440
450 EVERY 20,2 GOSUB 230
460 EVERY ss,1 GOSUB 390
470 EVERY 6 0 GOSUB 190
480 IF lf THEN 1010 ELSE IF plf OR cff THEN u=REMAIN(0):u=REMAIN
(1):u=REMAIN(2):bad=0:GOTO 540
490 IF INKEY(8)=0 OR INKEY(74)=0 THEN pd=-1:pc=2:GOTO 200
500 IF INKEY(1)=0 OR INKEY(75)=0 THEN pd=1:pc=1:GOTO 200
510 IF INKEY(9)=0 OR INKEY(76)=0 THEN 520 ELSE 470
520 IF pk THEN 530 ELSE pk=-1:pfx=px+1:pfy=py-1:LOCATE pfx,pfy:PE
N 2:SOUND 7,1000 10,6,1,1:PRINT CHR$(238);
530 IF px+pd>36 OR px+pd<1 THEN pd=-pd:pc=3-pc
540 px=px+pd:LOCATE px,py:PRINT USING "&";b(pc);
550 GOTO 480
560 IF cff THEN cff=0:SOUND 7,1000,40,7,0,0,3:LOCATE cx,cy:PRINT
USING "&";t;:FOR j=1 TO 20:NEXT:LOCATE px,py:PRINT USING "&";t;:G
OTO 910
570 IF plf THEN plf=0:SOUND 7,1000 40,2,0,0,3:LOCATE px,py:PRINT
USING "&";t;:FOR j=1 TO 20:NEXT:LOCATE cx,cy:PRINT USING "&";t;:G
OTO 910
580
590 ' set up
600
610 MODE 1:BORDER 12
620 INK 0,20:INK 1,1:INK 2,26:INK 3,7
630 DEFINT a-z:DEFREAL s:DEFSTR t-w
640 DEF FNp=VAL(RIGHT$(STR$(pfx),1)):DEF FNc=VAL(RIGHT$(STR$(cfx)
,1))
650 SYMBOL AFTER 200
660 ENV 1,5,-1,2
670 ENT 1,2,255,2,3,0,2
680 ENV 2,1,5,2,5,0,2,4,-8,2
690 ENT 2,7,100,1,3,0,8
700 RESTORE 950:FOR i=200 TO 223:READ a1,a2,a3,a4,a5,a6,a7,a8:SYM
BOL i,a1,a2,a3,a4,a5,a6,a7,a8:NEXT
710 DIM b(2)
720 b(1)=CHR$(15)+CHR$(2)+CHR$(32)+CHR$(200)+CHR$(201)+CHR$(213)+
CHR$(32)+STRING$(5,8)+CHR$(10)+CHR$(32)+CHR$(212)+CHR$(213)+CHR$(
214)+CHR$(33)+STRING$(5,8)+CHR$(10)+CHR$(15)+CHR$(3)+CHR$(32)+CHR
$(34)+CHR$(217)+CHR$(218)+CHR$(32)
730 b(2)=CHR$(15)+CHR$(2)+CHR$(207)+CHR$(200)+CHR$(201)+CHR$(202)+
CHR$(32)+STRING$(5,8)+CHR$(10)+CHR$(32)+CHR$(215)+CHR$(214)+CHR$(
215)+CHR$(32)+STRING$(5,8)+CHR$(10)+CHR$(15)+CHR$(3)+CHR$(32)+CHR
$(216)+CHR$(216)+CHR$(217)+CHR$(33)
740 t=SPACE$(5)+STRING$(5,8)+CHR$(10)+SPACE$(5)+STRING$(5,8)+CHR$(
10)+SPACE$(5)
750 u=CHR$(220)+CHR$(221):u1=u+u+u+u+u+u+u+u+u+u:u2=u1+u1
760 w=CHR$(222)+CHR$(223):w1=w+w+w+w+w+w+w+w+w+w:w2=w1+w1+w2
770 u3=STRING$(40,CHR$(143)):u=u+u
780 u3=SPACE$(4)+CHR$(218)+CHR$(219)+SPACE$(8)+CHR$(218)+CHR$(219
)+SPACE$(4):u3=u3+u3
790 u4=CHR$(218)+CHR$(143)+CHR$(143)+CHR$(219)
800 u5=SPACE$(4)+CHR$(229)+CHR$(229)+SPACE$(8)+CHR$(229)+CHR$(229
)+SPACE$(4):u5=u5+u5
810 u6=CHR$(229)+"  "+CHR$(229)
820 tp$=" "+STRING$(5,235):pl=3:sc=0:sh=0:ss=0.8
830
840 ' print screen
850
860 LOCATE 1,1:PAPER 2:PEN 3:PRINT w1+u1;:LOCATE 1,23:PRINT u2+u3
870 PEN 2:PAPER 3:LOCATE 1,1:PRINT "HITS       SHIPS       SCOR
E":LOCATE 1,25:PRINT "HITS          LIVES";
880 WINDOW #1,5,12,1,1:WINDOW #2,10,25,1,1:WINDOW #3,33,40,1,1:WI
NDOW #4,5,14,25,25:WINDOW #5,30,30,25,40:FOR i=1 TO 5:PAPER #i,0:
PEN #i,1:CLS #i:NEXT
890 PAPER 0:PEN 3:LOCATE 1,12:PRINT u3:LOCATE 4,13:PRINT u4:LOCATE
 14,13:PRINT u4:LOCATE 24,13:PRINT u4:LOCATE 34,13:PRINT u4:PEN
1
900 PRINT CHR$(22)+CHR$(1);:LOCATE 1,12:PRINT u5:LOCATE 4,13:PRIN
T u6:LOCATE 14,13:PRINT u6:LOCATE 24,13:PRINT u6:LOCATE 34,13 PRI
NT u6:PRINT CHR$(22)+CHR$(0);
910 GOSUB 80:GOSUB 100:GOSUB 110:GOSUB 120:GOSUB 140
920 cx=36:cy=5:cd=-1:cc=3-pd=1:py=19:pd=1:pc=1:cl=10+5*(8-ss)
:ss=0
930 LOCATE cx,cy:PRINT USING "&";b(cc);:LOCATE px,py PRINT USING
"&";b(pc);
940 GOTO 450
950 DATA 0,0,0,12,8,30,28,63,88,16,124,130,164,180,199,1,0,0,0,48
,33,240,136,168,127,63,73,227,60,73,93,107,17,125,130,1,1,17,57,2
15,252,0,34,223,6,36,116,177,79,220,170,60,96,191,160,223,144,250
,0,160,0,255,0,220,162,190,2,60,0,240,32,224
960 DATA 0,0,0,12,4,15,17,21,34,8,62,68,73,93,223,170,0,0,0,48,16
,100,196,217,65,32,96,65,32,36,40,53,136,100,193,120,130,131,156,
223,254,131,146,254,130,168,100,214,69,255,64,34,34,15,1,7,73,220
,0,73,0,255,0,250,82,253,1,34,4,253,5,255
970 DATA 1,3,7,15,31,63,127,255,128,192,224,240,248,252,254,255,2
55,121,125,73,73,168,0,0,230,250,105,164,144,73,0,0,0,0,144,73,73
,125,190,250,0,0,73,146,146,190,251,130,68,40,77,65,73,82
980
990 ' end of game
1000
1010 FOR i=1 TO 4:SOUND 3,300+1000*i,50,7:FOR j=1 TO 200:NEXT:NEXT
:MODE 0:CLS:PEN 1:PRINT "    FINAL SCORE:":PRINT "   ";sc:PRINT:P
RINT:PRINT "  GALLEONS SUNK:":PRINT "   ";sh:PRINT:PRINT:PRINT "
   ANOTHER GO?"
1020 q$=INKEY$:IF UPPER$(q$)="Y" THEN 1030 ELSE IF UPPER$(q$)<>"N
" THEN 1020 ELSE CLS:END
1030 CLS:LOCATE 1 24 PRINT "INSTRUCTIONS? (Y/N)"
1040 q$=INKEY$:IF UPPER$(q$)="Y" THEN GOSUB 1180 ELSE IF UPPER$(q$)
<>"N" THEN 1040 ELSE GOTO 610
1050
1060 ' titles
1070
1080 MODE 1:INK 0,0:INK 1,22:CLS:PEN 1
1090 DATA 10,50,22,32,32,32,207,223,222,207,32,222,207,223,32,30
,223,207,32,32,222,207,223,217,32,32,207,32 32,207,32,222,207,22
3,32,207,207,223,32,33,32 32,22,32 32,32,207,221,220 207,32,207,2
10,207,32,207,207,220,37,32 207,32 201,32,32 32,207 222,223
1100 DATA 207,32,202,218,207 32,201,218,220,32 32,32,32,32,22,32,
32,207,32,32,207,32,207,32,207,32,207,221,207 32,32,221,207,218,3
2,32,32,201,220,221,202,22,207,30,207,32,207,225,223,-1
1110 RESTORE 1090
1120 READ y:IF y=-1 THEN 1130 ELSE PRINT CHR$(y);:GOTO 1120
1130 LOCATE 5,24:PRINT "INSTRUCTIONS? (Y/N)";
1140 q$=INKEY$:IF UPPER$(q$)="N" THEN 610 ELSE IF UPPER$(q$)<>"Y"
 THEN 1140
1150
1160 ' instructions
1170
1180 MODE 1:INK 0,1:INK 1,22 CLS:PEN 1
1190 CLS:PRINT "GALLEON":PRINT "-------":PRINT:PRINT "In this
game, you command a galleon and fight against the computer's shi
ps."
1200 PRINT:PRINT "Your galleon at the bottom of the screen moves a
utomatically back and forth, and you can change its direction usi
ng right and left cursor keys or joystick. Cannonballs are fired u
sing the joystick fire button or copy key."
1210 PRINT:PRINT "Islands may obstruct your line of fire."
1220 PRINT:PRINT "It takes 3 hits to sink a ship and you have 3
ships or lives available. You score extra life for each 5 ships y
ou sink."
1230 PRINT "You score 10 points for each hit and 100 for sinking a
 ship.":PRINT:PRINT "(PRESS ANY KEY)"
1240 q$=INKEY$:IF q$="" THEN 1240 ELSE 610
```

In different directions

*Machine code scrolling on the Spectrum – with some help from **Henry Burek***

This program demonstrates the use of machine code routines to smoothly scroll the screen display in two different directions. The routines are Poked in from *Data* statements into the Print buffer (the left scroll starts at 23296 and the right scroll starts at 23327). However both routines are fully relocatable.

Both routines can be modified to scroll any number of columns from one column only to the whole screen. They can also be modified so that there is no wrap-around effect and the display disappears when it has scrolled off.

In the demonstration program a pattern of circles is first drawn and then right and left halves of the pattern continuously move towards the middle. To demonstrate the opposite effect, change the 255 in Line 220 to 239 and change the zero in Line 230 to 16.

```
Left Pixel scroll

        LD HL,22527  33,255* ,87 Poke with 224+c, where c is
   toP  LD D,H       84          the rightmost column.
        LD E,L       93
        XOR A        175
        LD B,16      6,16*       Poke with n, where n is the
   looP RL (HL)      283,22      number of columns to be
        DEC HL       43          scrolled.
        DJNZ looP    16,251
        JRNC JumP    48* ,4      Poke with 24 to cancel
        EX DE,HL     235         wrap-around.
        SET 0,(HL)   283,198
        EX DE,HL     235
   JumP LD BC,16     1,16* ,0    Poke with 32-n, where n is
        XOR A        175         the number of columns to be
        SBC HL,BC    237,66      scrolled.
        LD A,H       124
        CP 63        254,63
        JRNZ toP     32,229
        RET          281
```

```
Right Pixel scroll

        LD HL,16384  33,8* ,64   Poke with c, where c is the
   toP  LD D,H       84          leftmost column.
        LD E,L       93
        XOR A        175
        LD B,16      6,16*       Poke with n, where n is the
   looP RR (HL)      283,38      number of columns to be
        INC HL       35          scrolled.
        DJNZ looP    16,251
        JRNC JumP    48* ,4      Poke with 24 to cancel
        EX DE,HL     235         wrap-around.
        SET 7,(HL)   283,254
        EX DE,HL     235
   JumP LD BC,16     1,16* ,8    Poke with 32-n, where n is
        XOR A        175         the number of columns.
        ADD HL,BC    9
        NOP          0
        LD A,H       124
        CP 88        254,88
        JRNZ toP     32,229
        RET          281
```

```
  5 CLS
 10 LET st=23296
 20 FOR n=st TO st+61: READ a:
POKE n,a: NEXT n
 60 PLOT 0,175: DRAW 255,0
 70 PLOT 0,157: DRAW 255,0
 80 PLOT 0,18: DRAW 255,0
 90 PLOT 0,0: DRAW 255,0
100 FOR m=63 TO 191 STEP 128: F
OR n=16 TO 64 STEP 16: CIRCLE m,
87,n: NEXT n: NEXT m
110 FOR n=1 TO 64
120 RANDOMIZE USR 23296
130 RANDOMIZE USR 23327
140 NEXT n
150 FOR m=63 TO 191 STEP 128: F
OR n=16 TO 64 STEP 16: CIRCLE m,
87,n: NEXT n: NEXT m
160 RANDOMIZE USR 23296
170 RANDOMIZE USR 23327
180 GO TO 160
190 REM
200 REM   Scroll left
210 REM
220 DATA 33,255,87,84,93,175,6
230 DATA 16,203,22,43,16,251,48
,4,235,203,198,235,1
240 DATA 16,0,175,237,66,124,25
4,63,32,229,201
250 REM
260 REM   Scroll right
270 REM
280 DATA 33,0,64,84,93,175,6
290 DATA 16,203,30,35,16,251,48
,4,235,203,254,235,1
300 DATA 16,0,175,9,0,124,254,8
8,32,229,201
9900 SAVE " CIRCLE  MERGE EXAMPL
E" LINE 1
```

Commodore 64

Parallel lines

Connecting your 64 up to a Centronics printer – the second and final part by ***Eric Deghaye***

Now you've typed in the listing, all you have to do is make up the cable to connect your Commodore to the printer

The cable

All we need is some wire, the plugs, and a box for the user port plug as it is unprotected.

Parts	(Maplin code)
Centronics	Fk61R
2 × 12way edge connector	BK74R?
Multicore box 10 × 80 × 25mm	WYO3D

First make a small hole in the box and push the cable through, then strip the tip of 11 of the wires from the cable at both ends. Now cut a hole in the box to fit the 2 × 12 connector. Do not solder it yet, instead solder the connections as shown in fig 1. The detail of the plugs is shown in fig 2

When all the soldering is done, secure the 2 × 12 connector in the box any which way but loose (I bolted mine), then after checking for solder splashes, close the lid of the box and assemble the case of the centronics plug. It is a wise decision to put a label on the box saying which side is up

The use

Now the cable is ready, and you can plug it into your commodore and printer and run the software. Whenever you type '%' followed by return, the printer should spring into life by writing *'Ready'*. If it doesn't, check your connections in the cable, and if the computer hangs up when you type '%' and doesn't come back to life after *Run/Restore*, check your software for a mistake. If *Run/Restore* brings things back to normal, then the fault is possibly just a bad connection.

CONNECTIONS

Pin parallel	– connect to – Centronics	Function
B	1	STROBE
C	2	data 0
D	3	data 1
E	4	data 2
F	5	data 3
H	6	data 4
J	7	data 5
K	8	data 6
L	9	data 7
B	10	AKNLB
A	16	Logic ground level

Fig 1.

Fig 2

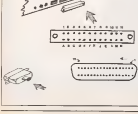
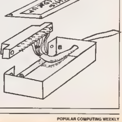


Fig 3



Music, music, music

*More musical goings-on for the BBC B by **Cy Noble***

This week the final part of the music creation program for the BBC B. Next week, we'll be printing a program to take the tune data (written by this one) and write a Basic program version of the tune. Lastly there will be a program to play your composition via machine code interrupts so you can use them in your own games, etc.

If you don't feel up to all that typing, write to Cy Noble at 323 North Circular Road, London N13, enclosing £10 for the entire suite of programs on cassette, £11.50 for a five inch disc and £18 for a three inch disc.

```
3520DEFPROCenv:VDU26,12
3530LOCAL I,A%,B%,C%,P%
3540PROCtitle("ENVELOPE DEFINER")
3550VDU26,28,0,24,39,2
3560PRINT"Do you want to"'
3570PRINT"1> Load envelopes"
3580PRINT"2> Save envelopes"
3590PRINT"3> Change or Define envelopes"
3600PRINT"4> Go back to Input option"
3610*FX21,0
3620G%=0:REPEAT:G%=GET-48
3630UNTILG%>0 AND G%<5
3640IF G%=1 PROCloadenv:PROCenv
3650IF G%=2 PROCsaveenv:PROCenv
3660IF G%=3 THEN 3690
3670IF G%=4 ENDPROC
3680GOTO3610
3690CLS
3700A%=&BC0:C%=1:E%(0)=C%
3710REPEAT:IF ?A%=0 THEN 3780
3720PRINT"Envelope ";C%;
3730FORB%=1TO13
3740E%(B%)=B%?(A%-1):IF E%(B%)>127 E%(B%)=E%(B%)-256
3750PRINT;",";E%(B%);
3760NEXT:PRINT
3770C%=C%+1:A%=A%+16
3780UNTILC%>16 OR ?A%=0
3790E%(14)=1:E%(15)=101:E%(16)=10
3800REM Chan,      freq,      length
3810INPUT"Envelope number ",E%
3820IF E%>16 OR E%<0 PROCboob:PROCenv
3830E%(0)=E%
3840A%=&BC0+(16*(E%-1)):E%(0)=E%
3850FOR B%=1TO13
3860E%(B%)=B%?(A%-1):IF E%(B%)>127 E%(B%)=E%(B%)-256
3870NEXT
3880CLS:FOR B%=0TO6:PRINTCHR$134:NEXT
3890VDU26,28,1,8,39,2
3900PRINT"Select parameter to change then"
3910PRINT"hold down arrow keys to change it."
3920PRINT"Up/down arrows for fast change"
3930PRINT"Left/right arrows for slower"
3940VDU131:PRINT"Parameters of Envelope ";CHR$133;E%(0)
3950PRINT"<SPACE> to hear note <DEL> stops it"
3960VDU26,28,0,24,39,8:CLS
3970FORB%=1TO13:PRINT;CHR$(B%+64);CHR$129:NEXT
3980FORB%=14TO16:PRINT;CHR$(B%+64);CHR$133:NEXT
3990VDU26,28,2,24,39,8,12
4000PRINT"Step length"
4010FORB%=1TO3:PRINT"Pitch chg ";B%:NEXT
4020FORB%=1TO3:PRINT"Steps in ";B%:NEXT
4030PRINT"Amp attack"
4040PRINT"Amp decay"
4050PRINT"Amp sustain"
4060PRINT"Amp release"
4070PRINT"Attack targ"
4080PRINT"Rel. targ"
4090PRINT"Channel";CHR$134
4100PRINT"Note val";CHR$134
4110PRINT"Duration";CHR$134
4120VDU26,28,14,24,39,8
4130FORB%=1TO13:PRINTCHR$131:NEXT
4140VDU26,28,14,24,39,8
4150PROCprintenv(0,E%)
4160*FX21,0
4170VDU26,28,22,24,39,10:CLS
4180REPEAT:*FX21,0
4190P%=INSTR(PROMPT$,GET$)
4200IF P%>17 P%=P%-17
4210UNTIL P%>0
4220IFP%=17 THEN 4370
4230VDU23,1,0;0;0;0;26,28,25,24,39,12:PRINT"Select from"'"A to P"''"(S=Stop)"
4240PROCprintenv(P%,E%):*FX4,1
4250REPEAT
4260I$=INKEY$(10000)
4270I=INSTR(PROMPT$,I$)
4280IF I>17 I=I-17
4290IF I>0 P%=I:PROCprintenv(P%,E%)
4300IF INKEY(-90):A%=21:X%=4+E%(14):CALL&FFF4
4310IF INKEY(-99):PROCsoundnote(E%)
4320IF INKEY(-58):E%(P%)=E%(P%)+4:PROCprintenv(P%,E%)
4330IF INKEY(-42):E%(P%)=E%(P%)-4:PROCprintenv(P%,E%)
4340IF INKEY(-26):E%(P%)=E%(P%)-1:PROCprintenv(P%,E%)
4350IF INKEY(-122):E%(P%)=E%(P%)+1:PROCprintenv(P%,E%)
4360UNTIL INKEY(-82)
4370VDU23,1,1;0;0;0;:*FX4,0
4380ENDPROC
4390:
4400DEFPROCprintenv(A,E%)
4410IFA>16 A=0
4420VDU26,28,15,24,22,8:CLS
4430IF A=1 E%(A)=E%(A) MOD128
4440IF A=2 AND ABS(E%(A))>127 E%(A)=0
4450IF A=3 AND ABS(E%(A))>127 E%(A)=0
4460IF A=4 AND ABS(E%(A))>127 E%(A)=0
4470IF A=5 E%(A)=ABS(E%(A)) MOD 256
4480IF A=6 E%(A)=ABS(E%(A)) MOD 256
4490IF A=7 E%(A)=ABS(E%(A)) MOD 256
4500IF A=8 AND E%(A)<-127 E%(A)=-127
```

```
4510IF A=8 AND E%(A)>127 E%(A)=127
4520IF A=9 AND E%(A)<-127 E%(A)=-127
4530IF A=9 AND E%(A)>127 E%(A)=127
4540IF A=10 AND E%(A)>0 E%(A)=0
4550IF A=10 AND E%(A)<-127 E%(A)=-127
4560IF A=11 AND E%(A)>0 E%(A)=0
4570IF A=11 AND E%(A)<-127 E%(A)=-127
4580IF A=12 AND E%(A)<0 E%(A)=0
4590IF A=12 AND E%(A)>126 E%(A)=126
4600IF A=13 AND E%(A)<0 E%(A)=0
4610IF A=13 AND E%(A)>126 E%(A)=126
4620IF A=14 E%(A)=ABS(E%(A)) MOD 4
4630IF A=15 E%(A)=ABS(E%(A)) MOD 256
4640IF A=16 E%(A)=ABS(E%(A)) MOD 256
4650FOR B=1TO16:IFA=B PRINTCHR$134;CHR$136; ELSE PRINTCHR$131;
4660PRINT;E%(B);CHR$134
4670NEXT
4680A%=&BC0:FOR B%=0TO12:B%?(A%+(16*(E%-1)))=E%(B%+1):NEXT
4690ENDPROC
4700:
4710DEFPROCsoundnote(e%)
4720 ENVELOPE e%,E%(1),E%(2),E%(3),E%(4),E%(5),E%(6),E%(7),E%(8),E%(9),E%(10),E%(11),E%(12),E%(13)
4730 SOUND E%(14),e%,E%(15),E%(16)
4740*FX21,0
4750ENDPROC
4760:
4770DEFPROCtitle(T$):LOCAL T%:T%=(32-LEN(T$))/2
4780FOR A=0TO1
4790PRINTTAB(T%,A);CHR$141;CHR$129;CHR$157;CHR$135;T$"  ";CHR$156
4800NEXT
4810ENDPROC
4820:
4830DEFPROCerrline
4840CLOSE#0
4850*FX4,0
4860VDU26,28,0,24,39,0,12,14
4870REPORT
4880PRINT" Error no.";ERR;" at line ";ERL''
4890*FX138,0,76
4900*FX138,0,73
4910*FX138,0,83
4920*FX138,0,84
4930A$=STR$(ERL)+","
4940FORK%=1TOLEN(A$)
4950A%=138
4960X%=0
4970Y%=ASC(MID$(A$,K%,1))
4980CALL&FFF4
4990NEXT
5000*FX138,0,13
5010ENDPROC
5020:
5030DEFPROCnotes(a,b,c,d)
5040LOCAL A,X,Y:X=0:Y=0
5050VDU26,28,0,5,39,0,12,15
5060FORA=0TO5:VDU132,157,135:IFA<>5 PRINT
5070NEXT:VDU26,28,3,5,39,0,12,15
5080FORA=5TO255 STEP48
5090PRINTTAB(X,Y)"C=";A;
5100Y=Y+1:IF Y>5 Y=0
5110NEXT:X=X+5:Y=0
5120FORA=13TO255 STEP48
5130PRINTTAB(X,Y)"D=";A;
5140Y=Y+1:IF Y>5 Y=0
5150NEXT:X=X+5:Y=0
5160FORA=21TO255 STEP48
5170PRINTTAB(X,Y)"E=";A;
5180Y=Y+1:IF Y>5 Y=0
5190NEXT:X=X+5:Y=0
5200FORA=25TO255 STEP48
5210PRINTTAB(X,Y)"F=";A
5220Y=Y+1:IF Y>5 Y=0
5230NEXT:X=X+5:Y=0
5240FORA=33TO255 STEP48
5250PRINTTAB(X,Y)"G=";A;
5260Y=Y+1:IF Y>5 Y=0
5270NEXT:X=X+5:Y=0
5280FORA=41TO255 STEP48
5290PRINTTAB(X,Y)"A=";A;
5300Y=Y+1:IF Y>5 Y=0
5310NEXT:X=X+5:Y=0
5320FORA=49TO255 STEP48
5330PRINTTAB(X,Y)"B=";A;
5340Y=Y+1:IF Y>5 Y=0
5350NEXT
5360PRINTTAB(11,5)CHR$131"+4 = sharp: -4 = flat";
5370VDU26,28,a,b,c,d
5380ENDPROC
5390:
5400DEFPROChelp(a,b,c,d)
5410LOCAL t%
5420VDU26,28,0,6,39,0:CLS
5430FOR t%=0TO4:VDU132,157,135
5440PRINT:NEXT
5450VDU26,28,3,24,39,0:CLS
5460PRINTTAB(10)"MUSIC DATA INPUT"
5470PRINT"E<N>=Edit D<N>=Delete(note) X=Sync"
5480PRINT"P<N>=P/back(from) I<N>=Insert (Note)"
5490PRINT"R=Repeat section C=Define Env S=Save"
5500PRINT"N=Display note values H=This page"
5510VDU26,28,0,24,39,5:CLS
5520PRINT"No.";TAB(5)"Chan";TAB(10)"En/V";TAB(15)"Note";TAB(20)"Len"CHR$136"B"CHR$137"Stops p/back"
5530VDU26,28,a,b,c,d
5540ENDPROC
5550:
5560DEFPROCcassette(C$)
5570*MOTOR 1
5580PRINT"Insert disc/cassette & press "CHR$129;C$
5590PRINT'CHR$136"cassette motor on if rewind required"
5600PROCyesno
5610IF Y%=0 THEN 5600
5620ENDPROC
```

New boots for old

*New Boots for your old Psion programs courtesy of **Mike Lloyd***

The 'boot' files on the bundled Psion software microdrives are straightforward SuperBasic programs, each about a dozen lines long. They produce the rather boring red header screen before clearing the memory, closing the default windows and loading the machine code programs which actually do the work. Because they are so easily amended QL owners can use their imagination to create personalised header screens to look at for the 20 seconds or so that it takes to load the machine code.

To start with, load any of the 'boot' programs without, of course, running it. List it and identify the lines which are essential for loading the machine code. These contain the *Clear*, *Close*, *Lbytes* and *Call* commands. Be careful, there are slight variations in the boot programs on each Psion microdrive. Delete all the lines which go to produce the header screen and renumber the remaining lines from Line 200. To allow for tests of the screen commands, temporarily add a *Stop* command immediately prior to Line 200. This is now the basis for your own 'boot'.

Although the opportunities for designing so intricate and outlandish screen are very tempting, it should be remembered that the 'boot' programs are retained in memory throughout the operation of the main code. A very long 'boot' takes up room which would otherwise be available for data, and so is not very desirable.

Nevertheless, if you are tempted to write a long program, consider erasing the 'help' file from the cartridge if more sectors are required in order to save the routine.

It is possible to add to your 'boot' extra facilities such as a *Baud* command (if your printer needs it), an *Input* line to allow a choice between setting a printer to NLQ or normal dot matrix mode, or an output from the system clock.

If you feel artistic then background graphics of, for example, a quill pen could be included. The final result is bound to be better than the boring Psion original, and it can reflect your individual computing style.

When you have produced a satisfactory screen, delete the *Stop* command, erase the previous 'boot' on the microdrive (covering the protection tab area with sticky tape if the tab has been broken off) and then save the new version of 'boot'.

To give you some ideas, new boot programs for *Quill* and *Chess* are reproduced below, together with a screen dump of one of them in action.

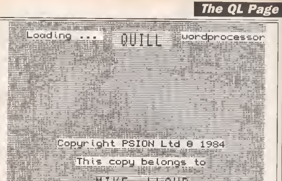
Listing for 'chess' boot

```
100 CLOSE#1:CLOSE#2:lscreen
110 addr=184064
120 a = RESPR(0):a = RESPR(a-addr)
130 LBYTES mdv1_chessc,addr
140 CLOSE#0:CALL addr
150 STOP


200 DEFine PROCedure lscreen
210 MODE 4
220 OPEN #1,con_512x256a0x0_32:INK 4:
PAPER 0:CLS:CSIZE 2,0
230 AT 3,6:PRINT 'Loading...
240 INK 7:CSIZE 3,0:FOR x=5 TO 12:AT
x,13-(x MOD 2):PRINT FILL$(CHR$(200)&
CHR$(32),8)
250 CSIZE 3,1:INK 7:PAPER 2:AT 4,11:P
RINT" QL CHESS "
260 INK 4:PAPER 0:CSIZE 2,0:AT 17,8:P
RINT"by PSION with Richard Lang"
270 AT 19,9:PRINT"Copyright 1984 PSIO
N LTD"
280 AT 21,6:PRINT 'This copy belongs
to Mike Lloyd'
290 END DEFine lscreen
```

Listing for 'Quill' boot

```
100 WINDOW 512,256,0,0:PAPER 0:CLS:CS
IZE 2,0
110 AT 4,4:PRINT"Loading ... "
120 CSIZE 3,1:STRIP 0,2,1:AT 2,13:PRI
NT ' QUILL '
130 PAPER 0:CSIZE 2,0:AT 4,28:PRINT w
ordprocessor'
140 AT 16,9:PRINT"Copyright PSION Ltd
 1984"
150 AT 18,12:PRINT'This copy belongs
to'
160 AT 20,15:CSIZE 3,1:STRIP 0,2,1:PR
INT 'MIKE  LLOYD'
170 BAUD 4800
180 CLOSE #1:CLOSE #2:WINDOW #0,400,2
0,35,215:CLEAR
190 EXEC_W mdv1_quill
```


Loading ... QUILL wordprocessor
Copyright PSION Ltd © 1984
This copy belongs to
MIKE LLOYD



Sneaky cheating!

This week is devoted to a long and rather special program. It represents, perhaps, the pinnacle of sneaky cheating.

Kenneth Devlin has written an editor routine that works on the *Save* game data of the Commodore 64 version of *Elite*.

Using his program you can give yourself any equipment, cargo, cash, legal status or position in space that you desire! The program comes in 12 sections – 1000 initialise, 2000 save, 3000 display equipment; 4000 load, 5000 menu, 6500 print cargo, 6600 print goods available, 6800 keyboard scan, 7000 change equipment, 8500 change cargo, 8600 change goods available, 9000 data. Some of these parts, and the Rem statements can be omitted to make a more compact listing. You must have sections 1,4,7, and 12, though.

The only thing it doesn't change is your combat status – you have to do something yourself!

```
Elite Editor Program   Copyright Kenneth J Devlin 1985
The following listing is for the Commodore 64
[illegible]
```

Tony Bridge's Adventure Corner



Original atmosphere

Colossal Cave, the original adventure, has a lot to answer for – it was after seeing this classic that Scott Adams got the bug (no pun intended) to write his own brainteasers But this first adventure required a huge mainframe to run on, who would have dreamed, as they say, that the same program would one day be seen on the lonely Spectrum with its vast 48K memory?

Spectrum, Commodore and Amstrad versions abound, most coded by the author It s no surprise though, that several authors should get the idea to use *The Quill* when writing their version (I'm not even going to attempt to unravel the copyright situation, except to say that Crowther and Woods the original authors, should surely be millionaires now if they had received those royalties surely due to them!)

The first *Quill'd Colossal* was sent to me 18 months ago. It was mentioned in The Corner then, but to recap author G L Watson has used all but four bytes of the Spectrum's memory in faithfully recreating the classic, and the layout is standard *Quill*. The tape I received was Version 1 0 so there may be more recent versions now There's little to complain about here though it's a pity that you have to *Get* objects piece by piece, rather than *Get All*. This is a criticism that can be levelled at all early *Quill'd* efforts – newer versions of Watson's *Cave* may be more interesting, but the version I have is rather dull If you're interested in seeing the program that started it all, this has the advantage of being cheap – just £2 50 for the tape *Zork* was being worked on by the writer back then, but I imagine that even if all the text of that monster could somehow be squeezed into the Spectrum (multi-parts, possibly?), Infocom would be more assiduous at protecting their copyright Contact: G L Watson, 38 Cumbria Close, Houghton Regis, Dunstable, Beds LU5 5KY

Another program mentioned in The Corner last year was *The Dunshalt Donut* Ross Harris was one of the first writers of a Quill'd adventure that offered rather more than a program on a tape He didn't too well with it, which was a pity, as the little booklet that came with the tape was a gem, and the game itself was quite tough and atmospheric – the Thing in the bed, even though I was always careful not to disturb it, was quite spine-chilling Harris has a special way with a title screen, and the screen of his version of *Colossal* is a beautiful picture, capturing *exactly* the atmosphere of the original Once into the game, you'll find that this is version 2 0, so again we may see newer versions in time, there is also a copyright notice in favour of Anubis Software, Ross Harris' company – I'm sure DEC and Crowther/Woods would be interested in *that* information!

Before getting into the adventure proper, information is available, and this is typed teletext-style in a colourful redesigned character set Though this is helpful, particularly to newcomers to the art, the old Spelling Monster rears its unnecessary head again, which is a great pity so early in the game

A well-worn path

The game itself follows the same very well-worn path as the original, although I'm glad to see that the demand of two years experience has been answered and the location descriptions are rather more complete than usual – there's even a stab at an explanation for the snake being so scared of the bird Harris uses *The Quill* well, but almost disguises the fact. At just £1 50, it's obviously good value, and the tape includes a bonus program called *Satirical*. This is a parody of the parody from Delta 4, *Spectacle*, an hilarious voyage through an imaginary Micronet-like databses. One of these is quite enough, though, and while *Satirical* is thrown in with *Colossal*, it's rather inconsequential and frankly time-wasting Ross has many good ideas though, and I look forward to his next program Ross Harris, 30 The Riggs, Auchtermuchty, Cupar, Fife KY14 7DX

I've gone on at some length about these two programs, but I find it incredible that, while there are many programmers willing to use the original Crowther/Woods scenario, there don't appear to be any eager to tackle a graphic version Ross Harris has created a marvellous picture as a title to his program – how I'd love to see some of those old familiar locations illustrated in this fashion!

One of the programs that featured in Gilsoft's *Gold Collection* was *Barsak The Dwarf*, by P and V Napolitano I felt at the time of its release that it was a competent yet rather dull game, with lots of locations but nothing much to do and no sense of urgency about the problems – the player didn't seem to be involved to any degree The authors have recently sent me an updated version which they have written using *The Illustrator*

Terse descriptions

Eagerly loading it in, I assumed that this new version would be substantially different from the original – but I was very disappointed. Yes, some rather nice pictures were there, each one signed by PV, but the location descriptions are extremely terse The major change is a RMC, or Random Mobile Character this sounds very grand, but is in fact something called Frododo, which wanders on to the stage every so often and utters some inanity

The locations are quite coherent; that is, the player has the sense of wandering around a real building, in this case a castle, but although the descriptions sometimes include lines like "there is a table here", you cannot always *Examine* those items Maybe you can *Get* or *Put* something under the table, but I have not been able to do this

The playing area is easy to explore, though there are obviously certain places which remain secret until problems are solved – I was glad to see that the Draconian measure of the first version (death within a few moves from hunger) has been substantially altered here Now the player has quite a number of moves before he succumbs, plenty of time in which to find a source of food. Now, though, there is the problem of finding water – I haven't solved this one yet, thus proving that there must be more locations than at first appears

The graphics really add nothing to the adventure, and if you have already have a copy of *Barsak* then remain content – if not, it's an intriguing little adventure that is certainly worth the new asking price of £1 99 Contact P & V Napolitano, 48 Ledger's Road, Slough SL1 2RL Next week, more *Quill'd* adventures, including the very first *Patch'd* game

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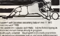
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Return to Eden on Amstrad How do I get into the city? I can offer help via Jewels of Babylon, Message from Andromeda and Snowball in return. David Carr, Theralea Oak Road, Mottram Saint Andrew, Macclesfield, Cheshire

Magic Mountain on Spectrum. I asked for the Scroll as my one wish from the genii in the bottle but he didn't grant my wish and disappeared in a puff of smoke! What can I wish for he will grant? A R McDowall 7 Third Avenue Wallingborough Northants.

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Bubbling Under

ACE/Spectrum/C64/C16 (Cascade); Kennedy Approach/C64 (Microprose/US Gold); Monty On The Run/C64/Spectrum (Gremlin Graphics); One Man and His Droid/Spectrum (Mastertronic), Quest For the Holy Grail/Spectrum (Mastertronic); Soul of a Robot/Amstrad (Mastertronic); Robin of Sherwood/Various (Adventure International).

All figures compiled by Gallup/Leisurescope

Top Twenty

1	(-)	Monty on the Run *(Spectrum/C64)*	Gremlin Graphics
2	(1)	Way of the Exploding Fist *(Spectrum/C64/Amstrad)*	Melbourne House
3	(3)	Frank Bruno's Boxing *(Spectrum/C64/Amstad)*	Elite
4	(4)	Impossible Mission *(Spectrum/C64)*	Epyx/US Gold
5	(7)	Formula One Simulator *(Spectrum/C64/C16)*	Mastertronic
6	(6)	Finders Keepers *(Spectrum/C64/Amstrad/MSX)*	Mastertronic
7	(8)	Daley Thompson's Supertest *(Spectrum)*	Ocean
8	(13)	Action Biker *(Spectrum/C64)*	Mastertronic
9	(-)	Starquake *(Spectrum)*	Bubble Bus
10	(4)	Hacker *(Spectrum/C64/Amstrad/Atari)*	Activision
11	(9)	Fighting Warrior *(Spectrum/C64)*	Melbourne House
12	(14)	BMX Racers *(Spectrum/C64/C16)*	Mastertronic
13	(6)	Who Dares Wins II *(C64)*	Alligata
14	(15)	Graham Gooch's Test Cricket *(Spectrum/C64)*	Audiogenic
15	(11)	Fairlight *(Spectrum)*	The Edge
16	(-)	Chiller *(Spectrum/C64/Amstrad/MSX)*	Mastertronic
17	(18)	Beach-Head *(Various)*	Access/US Gold
18	(19)	Bored Of The Rings *(Spectrum/C64/BBC)*	Silversoft
19	(-)	Nonterraqueous *(Spectrum/Amstrad)*	Mastertronic
20	(5)	Now Games *(Spectrum/C64)*	Virgin

Figures compiled by Gallup/Leisurescope

Readers' Chart No 49

1	(1)	Way of the Exploding Fist *(Spectrum/C64/Amstrad)*	Melbourne House
2	(2)	Fairlight *(Spectrum)*	The Edge
3	(4)	Daley Thompson's Supertest *(Spectrum)*	Ocean
4	(6)	Hypersports *(Spectrum/C64)*	Imagine
5	(-)	Spy Vs Spy *(Spectrum/C64)*	Beyond
6	(3)	Now Games *(Spectrum/C64)*	Virgin
7	(-)	Bored of the Rings *(Spectrum/C64/BBC)*	Silversoft
8	(2)	Frank Bruno's Boxing *(Spectrum/C64/Amstrad)*	Elite
9	(5)	Summer Games II *(C64)*	Epyx/US Gold
10	(7)	Red Moon *(Spectrum/C64/Amstrad)*	Level 9
	(-)	Flight Simulator II *(C64)*	Sublogic
	(-)	Nightshade *(Spectrum)*	Ultimate

Winning Phrase No 48 · "Willy shoots the tax man" From Craig Bone of Selby, N Yorks.

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New Releases

HIGH LEVELS

Imhotep is Ultimate's latest Commodore 64 game and it leaves me baffled as to what, exactly, Ultimate think they are doing. *Imhotep* is an utterly unoriginal zap, zap game of the most repetitive kind

It could easily have been written two or more years ago and Mastertronic would put it out for £1 99 Its single saving grace is that it is quite a well designed zap game and is addictive in a slightly irritating sort of way

I'll spare you the plot; suffice to say you have to survive and battle your way over a scrolling landscape of pyramids and palm trees (at least to begin with) You are a little man on a flying vulture and the baddies are lots of other men of lots of other vultures Your vulture is equipped with the usual laser blast device (do the NSPCA know?) with which to shoot down anything that moves

There is some subtlety to the game in that different coloured vulture riders behave in different ways, some actively seek you out and must be blasted as soon as possible, others can safely be dodged and they will fly off



harmlessly

The game quickly gets fiendishly difficult to play with an enormously high level of joystick dexterity and reaction speed being required. Though a challenge, this is also infuriating since no one in the office could figure out how to change the level.

We didn't get to see later screens despite a great deal of effort and concentration.

It seems fairly obvious that this game wasn't written by Ultimate in house – it doesn't have the Ultimate look and there is an author's credit on the opening screen. So what made them decide to release it? More particularly, what made them think they can charge £5 95 for something that is clearly not a top of the range game? I'm mystified Maybe later levels get very much more sophisticated, but I doubt it

It isn't terrible, but I strongly advise you not to just go out and buy this one because of the Ultimate name and the pretty box See it in action first, then decide.

Program *Imhotep*
Price *£9 95*
Micro *Commodore 64*
Supplies *Ultimate Play the Game*
Ashby de la Zouch

NUMBER ONE

The Last V8 along with *Spellbound* and *Hero of the Golden Talisman* form the first three titles in Mastertronic's new MAD range Games thought to have a bit extra than the usual titles and consequently put out at a higher price Though one would hardly call £2 95 high

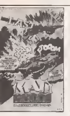
The Last V8 is an unusual road race game with some astounding music from Rob Hubbard who seems to be capable of things on the Commodore 64 that enable people with a complete arsenal of DX7s, Fairlights and Linn Drums

On this occasion the music sounds like 12 rock bands playing simultaneously with Keith Emerson on synthesizers and Mike Oldfield on guitar – it's very LOUD!

I like the plot of *The Last V8* as well, it has definite Moorcock/Mad Max touches – humanity has been decimated (as usual) and you are a scientist charged with the task of bringing together the remnants of mankind.

To achieve this you have constructed a car, a hybrid of old parts and new technology – the last V8

The game involves steering the V8 around a series of landscapes – each section must be completed within a strict time limit (before the



occasional stray nuclear device drops and melts your car)

The skill of the game comes in the successful negotiation of the track

The screen is divided into two sections – car instrument panels on the bottom two thirds and a scrolling aerial view of the track in the top third. Though the car is fairly tiny, the rest of the scrolling background is nicely detailed.

There are buildings, houses, trees and rivers, but careful design gives the required impression of an empty rather bleak landscape

To begin with the game is fiendishly difficult; negotiating the first section of track within the time limit seems impossible – although you begin to realise that provided you do not actually bump into anything there are some shortcuts

One final feature of the game, it has synthesized speech – quite good it is, too, though there are some words like radeaschen that take a while to figure out

At £2 99 the game is already a steal, an hopefully everybody will buy this game rather than copy it. It makes quite a few full price titles look faintly ridiculous

Expect to see it in the number one slot within the next three weeks.

Program The *Last V8*
Price *£2.99*
Micro *Commodore 64/ Commodore 128*
Supplies *Mastertronic*
8-10 Paul Street
London
EC2A 4JH

ALIEN TARGET

More goodies from Mastertronic with *Space Hunter* a space game that reminds me vaguely of *Codename Mat.*

Your task is to search through 15 star systems capturing food transporters before alien horrors can grab them and blast you to bits

All this involves piloting the usual space cruiser at warp speeds through the usual clusters of little white dots and blasting at the usual fleets of triangular shaped alien space ships The screen shows alien targets, range and a map of the local star system

A battle computer also helps you blast things in an orderly fashion.

A new touch for this sort of game is a docking option where you can get beamed aboard various supply ships that are around

In this mode the screen changes to a side view of the interior of the place you've entered and you get to hunt about looking for food – it looks rather like a boring maze game with big blocky graphics

However, as unoriginal as the game is, it has the immediate virtue of being cheap and is as fun to play as many of its expensive rivals Worth a look or two



Program *Space HUnter*
Price *£1 99*
Micro *Commodore 64*
Supplier *Mastertronic*
8-10 Paul St.
London
EC2A 4JH

New Releases

EXTENDED

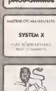
Pride Utilities' program, *System X*, is an extension to Amstrad Basic – it adds 30 new commands, some fairly trivial, but others very useful indeed.

All commands are preceded by a slash to tell the machine that these are not part of the usual command set.

Trivial additions include *Capoff* and *Capon* to switch the caps lock of or on within a program.

Interesting and useful commands include *Dpeek* to peek two locations at once, *Getchar* to read a character from the screen text position and place it in a string and *Motor* to switch the 464 cassette player on or off or other devices connected to the 464 remote plug

Other commands cover moving sections of memory around and speeding up saving – both potentially very useful indeed £8 95 is a reasonable price for this kind of utility



Program *System X*
Price *£9 95*
Micro *Amstrad*
Supplier *Pride Utilities*
7 Chalton Heights
Luton
Beds
LU4 9UF

RETARDED

Bum Breasts Poo Poo Hilarious eh? I can't find the right word to describe *Whoopsy* from Shards Software. Well actually I can but decorum restrains me

The phrase 'utterly juvenile' does spring to mind, *Whoopsy* is the sort of game five year olds may well snigger over.

Here's the plot; you are a baby and over several screens, all of them almost exactly the same as one another, you must collect toys and dodge your mother

Your mother can be distracted from her attempts to spoil your fun by the simple expedient of judicious use of your non-potty trainedness. Leaving your mark causes mummy to rush towards the offending mess and clear it up giving you time to grab some more toys.

It's a laugh a minute as you can imagine.

The graphics are OKish, mummy, in particular, is well designed.

Whoopsy is the end result of the sort of ideas very socially retarded programmers have after having drunk 18 pints of Special Brew.

Program *Whoopsy*
Price *£8 95*
Micro *BBC*
Supplier *Shards Software*
Roycraft
18 Linton Rd
Barking
Essex

Pick of the week

BIZARRE SCENARIO

The Pawn is an extremely sophisticated text adventure for the QL; sophisticated partly because of its long evocative descriptions of each location, but primarily because of its complex language parser which can negotiate the most fiendishly twisted English language sentences imaginable

The program is capable of understanding, for example, instructions to take certain combinations of objects, eg, get all except the ring If the objects are inside an object, eg, a bag, you can refer to the collected objects as the *contents* of the bag

The provisional manual summerises what is possible in an instruction from a mythical adventure (I'd love to play it). Get all except the cases, but not the violin case, then kill the man eating shrew with the contents of the violin case Remove the shrew's tail and use it to tie the pole and the noose together

The Pawn also features other characters that you will wish to converse with, you can use both Ask (as in Ask the troll about the food) or Say (as in Say to Norman "how's your stone cladding"). Like Infocom games it features basic commands like Brief/Verbose to toggle the length of text description and a Score which is constantly displayed.

Other clever options include a command Left n and Right n where n is the position of the margin – useful on TVs with slightly dodgy displays – and Contrast which lets you choose green and white text

The plot is something I am reluctant to say much about except that it is not the usual po-faced stuff and instead features a bizarre scenario of warring drink manufacturers – well, I think that's what it all means. The actual point of the plot is one of the things you have to find out in the game.

The Pawn is an extraordinarily clever adventure and I think it is also one of the few QL programs that actually looks like it is using some sophisticated programming power and a 6800 series chip Any QL owner even half interested in adventures should buy it.

Program *The Pawn*
Price *£19 95*
Micro *QL*
Supplier *Sinclair Research*

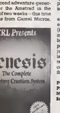
This week

Program	Type	Micro	Price	Supplier
Hi Rise	Arc	Amstrad	£7.95	Bubble Bus
Your Health	Ut	Amstrad	£7.95	Hisoft
AtariSmash Hits 4	Arc	Atari	£11 95	English
Elektraglide	Arc	Atari	£8.95	English
K Ram	Ut	Atari	£29 95	Kuma
Devpac ST	Ut	Atari ST	£49 95	Hisoft
6502 Macro Asm/ Dis	Ut	Atmos	£18 95*	R McLaughlin
Computers at Work	Ed	BBC	£14 95	BBC
The Mole Concept	Ed	BBC	£14 95	BBC
Uniformly Acc Motion	Ed	BBC	£14 95	BBC
Powerplay	S	BBC	£14 95	Arcana
The Last V8	Ad	Commodore 64	£2.99	Mastertronic
Golden Talisman	Ad	Commodore 64	£2.99	Mastertronic
Henrys House 2	Arc	Commodore 64	£8 95	English
Imhotep	Arc	Commodore 64	£5 95	Ultimate
Little Computer People	Ed	Commodore 64	£14 95	Activision
Rick Hudson	Ad	Electron	£9 95	Robico

*Plus you own cassettes or disc

DIFFERENCES

The second adventure generator for the Amstrad in the space of two weeks – this time *Genesis* from Camel Micros,



marketed by CRL. It's always a problem taking a quick look at detailed programs like these – you really need to spend weeks at the keyboard before delivering a definitive report However, when comparing the two packages, it's worth reporting on some first impressions

Both are graphic adventure generators (with the addition of sound with *Genesis*), yet one is £9 95 (*Genesis* again), the Incentive offering being £22 95 . that's one big difference But there are differences *Genesis* offers 50 Marker/Counter variables . Incentive's *Graphic Adventure Creator* offers almost eight times as many. Although the 'number of locations' statistic can be misleading, Camel estimate easily getting 80-100 locations each with its own graphic in memory, while Incentive quote 300-300 The Incentive package also allows multiple input – *Genesis* does not

This is not to say that Genesis is a bad buy – as the example program shows, (both produce code that runs independently of the creator by the way) it can produce perfectly acceptable results I just get the feeling that GAC is probably the better of the two However, if you find its cost prohibitive, *Genesis* is the one for you

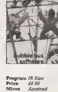
Program *Genesis*
Price *£9 95*
Micro *Amstrad*
Supplier *CRL*
CRL House
9 Kings Yard
Carpenters Road
London E15 2HD

STRIKE-BREAKER

Hi Rise is a game that, though lacking any elements to make you gasp, wow amazing, is so utterly playable and horribly addictive that all other considerations fade away. It is also, I think, one of the first good games to be released on the Amstrad first.

The plot is the usual arcade idiocy You are Builder Bob, little alliterative person, and your task is to paint a series of scaffolds Unfortunately, the striking workers (we are not told their names but Sam, Sonny, Simon, Sonja, Stan, Stanislaus and Solzhonitsnyo are names that spring to mind) don't wnt you to break the strike and chase you arround the scaffold. They can be stopped only by a court injunction and sequestration of their union assets – well, actually that's a lie, you stop them by squirting glue in front of them.

What makes the game is the 3D design of the scaffold – it looks vaguely like *Ant Attack* with shading used to give a sense of thickness to the girders It also means that you can't see what lurks behind every corner, adding to the difficulty of the game There are 99 different scaffolds to master and I haven't even been able to complete the first one but next time . . . excellent fun.



Program *Hi Rise*
Price *£8 95*
Micro *Amstrad*
Supplier *Bubble Bus*
87 High Street
Tonbridge, Kent
TN9 1RX

TIME LIMIT

Every so often I get sent a program from people hoping to make it big (whatever that means) and asking what I think of their first effort *Steeplejack* is from a company called DigiTape, which describes it as 'not best nor cheapest but fun to play' and that's about right I think

The game involves destroying section by section, a series of objects – the first screen is a British Rail train This involves planning your path around the object to do the most damage as quickly as possible You are under a strict time limit and it proves difficult not only because of the sheer amount of destruction you have to achieve, but also because inside each object there lurk various nasty objects that may leap out and zap you, forcing you to start all over again

Graphically the game is no more than average but there is a touch of originality to the game and it is fun to play. At £2 99 it's a little more than standard budget price but not offensively so It rates a look, anyway.

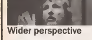
Program *Steeplejack*
Price *£2 99*
Micro *Spectrum*
Supplier *DigiTape*
Freepost
Swansea

Compiled by Graham Taylor

New Releases is designed to let people know what software is coming on the market If you have a new game or utility which you are about to release send a copy and accompanying details to New Releases, *Popular Computing Weekly*, 12 13 Little Newport Street, London WC2R 3LD

This week

Activision, 15 Harley House, Marylebone Road London NW1, 01-486 7588 **Arcane**, Avondale Workshops, Woodland Way, Kingswood, Bristol, Avon BS15 1QH 0272 5571 **BBC**, 35 Marylebone High Street, London W1M 4PP **Bubble Bus**, 87 High Street, Tonbridge, Kent TN9 1RX, 0732 355962 **CRL**, CRL House 9 Kings Yard Carpenter s Road London E15 2HD, 01-533 2918 **Electric Dreams**, 31 Carlton Crescent Southampton Hampshire S01 2EW **English**, Box 43 Manchester M60 3AD 061-835 1358 **Hisoft**, 180 High Street North, Dunstable Beds LU6 1AT 0582 696421 **Kuma**, Kuma Computers 12 Horseshoe Park, Pangbourne RG8 7JW, 07357 4335 **Mastertronic**, Park Lorne 111 Park Road London NW8 7JL 01-402 3316 **Palon**, 22 Dorset Square London NW1 6QG 01-723 9408 **R. McLaughlin**, 28 Farmfields Close Sheffield S19 6LR, 0742 470084 **Robico**, 3 Fairland Close Llantrisant Mid Glamorgan CF7 8DH, 0443 227354 **Bigmesoft**, 8 Pine Dale Rainford, Merseyside WA11 8DP **Superplant**, Llangeitho Tregaron Dyfed, Wales SY25 6QG 097423 223 **Ultimate**, Ultimate Play the Game, Ashby-de-la-Zouch, Leicester, LE6 5JV 0530 411485



Wider perspective

I remember my first meeting with an Apple II computer in 1979, a computer so elementary that it had an Integer only Basic in Rom, and required a plug in card to load the floating-point Applesoft Basic.

The first thing that happened to my Apple was that the top came off, revealing a large part of the workings, and nearly all the chips

That experience is probably most easily shared these days by owners of BBC computers, who are forever having to take off the top to their machine, for this purpose or that.

Look at those chips arrayed for inspection, to see what types of chip they area, and where they were fabricated.

Opening up any microcomputer these days – regardless of manufacturer – is like taking a journey round the world. And in the journey, the developing countries seem to take over a large part of the itinery

There is no such thing any more as a completely British, US, or Japanese microcomputer Fabrication of the final product may take place in Britain or wherever, but only small number of the components will actually be made in Britain.

Of the indigenous computer manufacturers in Britain, how many are anything other than computer assemblers? How much of the hardware for the final product is British? Often very little I am not suggesting that we should ignore the British content of a product, rather I am saying that we ought to start examining that part of the content of a product which comes from the developing countries of the world and asking ourselves how the micro companies can produce their models at such seeming incredibly low prices

How many people who contributed to charity appeals for the dying in Africa also bought a microcomputer because it was exceptional value for money? How many of these people who bought such a computer realise the often apalling conditions for the mainly female 'sweatshop' workers in some developing countries?

The attitude of computer assemblers is rather short-sighted (as well as being rather selfish)

Many of the problems in Africa, say, are due to the way in which aid from the developed world (East and West) is given Most ends up as military aid, but another popular form of aid is to develop (cheap) manufacturing, which in turn is used to help to subsidise industries in the developed countries The debt problems of the Third World can be directly attributed to worthless aid and exploitation of cheap labour Yet, Governments and governing bureaucracies will not act to help the needy in any real sense – for example, the present farce concerning Britain and the EEC's reasons for not giving aid

How can the individual help? In South Africa black workers have been exploited in a similar manner, and public pressure in the West caused many multinational companies to start paying living wages to black employees (how well it worked in practice is another question) This was not action at the level of governments, but action on firms to act in a humane manner

I would suggest that any microcomputer company which trades anywhere in the world also has duty to do its utmost to ensure that the workers in those countries, producing good for our exploitation, should be paid a minimum wage

The prices we pay for our micros in the high street would have to increase, but given the profit margins on computers, there would not be a vast increase in price for the end user.

It is time micro firms began to look beyond profits to a wider perspective which includes concern for the individual, be that individual in this country or thousands of miles away.

Boris Allan

Grid values

Puzzle No 182

In this Crossnumber puzzle can you find the value of A, B and C that fit into the grid?



ACROSS	DOWN	
1 B^5	1 B	4 A * B
3 B * C **	2. A^2	5 C – 1
7 B^3	3 A + B	6 A

Solution to Puzzle No 177

The numbers which satisfies the five given conditions is 933157

```
10 LET N=2
20 LET S=N*N
30 R=S+1
40 P$=STR$(R)
50 FOR Q=2 TO LEN(P$)
60 Q$=MID$(P$,Q,1)
70 IF Q$="0" OR Q$="2" OR Q$="4" OR Q$="6"
   OR Q$="8" THEN GOTO 120
80 NEXT Q
90 X=R
100 GOSUB 130
110 IF T=1 THEN PRINT X
120 N=N+2:GOTO 20
130 T=0
140 FOR F=3 TO SQR(X)+1 STEP 2
150 IF X/F=INT(X/F) THEN 180
160 NEXT F
170 T=1
180 RETURN
```

From condition ii) we know that the required value is one more than a perfect square and as the program generates successive squares. As this value must also be prime, the square must be even so as to produce an odd value when 1 is added. Therefore the number to be squared must also be even Each value is tested, firstly to determine that all digits are odd (Lines 40 to 80) and then to test for primality The simplest (though not the shortest) method is by trial division (Lines 130 to 150)

All values that pass the primality test are printed out.

Winner of Puzzle 177

The winner is J P Mensink of Ryde, Isle of Wight, who receives £10.

Rules

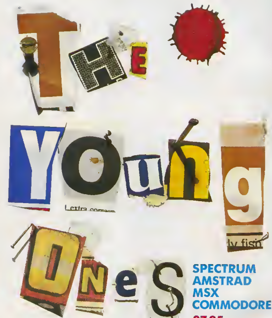
The closing date for Puzzle 182 is December 4

The Hackers





HEALTH WARNING: BOUNTY BOB CAN SERIOUSLY DAMAGE YOUR SANITY!



THE
YOUNG
ONES